

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 5 April 2005. Responsive to the rejections made by the Examiner, Claim 2 has been cancelled and Claims 1, 3 - 15 have been amended and are now clearer in their respective recitations.

In the Official Action, the Examiner rejected Claims 1-3, 5-10 and 12-15 under 35 U.S.C. § 103(a) as being obvious over Humlicek, et al. (US Patent No. 5,822,782; hereinafter “Humlicek”) in view of Talagala, et al. (US Patent No. 6,742,081; hereinafter “Talagala”). Additionally, the Examiner rejected Claims 4 and 11 under 35 U.S.C. § 103(a) as being obvious over Humlicek in view of Talagala and further in view of Patel, et al. (US Patent No. 6,799,284; hereinafter “Patel”). In setting forth the rejections, the Examiner observed that Humlicek discloses an array configuration for a multiple disk drive system having a disk/sequence function (field 230 of Fig. 2) and other global information. The Examiner reasoned that validating an array in accordance with Humlicek would include steps of reading an array configuration to obtain information related to a quantity of disk drives and compare/calculate/numerate a quantity of drives in the array to update the configuration information of each group. The Examiner further stated that the information used to determine certain information pertaining to the array of Humlicek would be provided by the physical connection

(configuration ID or sequence/function) of each disk drive (array controller type, channel, address of each disk, etc.).

Applicants' invention, as now more clearly recited by the amended Claims, provides an array configuration structure which includes, among other things, "a serial check sum of each disk drive in said corresponding disk-array, said serial check sum of each said disk drive being arranged in said array configuration structure in accordance with a position and function of said disk drive in said corresponding disk-array". In this configuration, the recited method step of "reading every said serial check sum in said array configuration structure" can be used to "compar[e] said number of disk drives computed in said indication acquiring step with a number of disk drives determined from said serial check sum reading step" as recited by Independent Claim 1, or used to "compar[e] said disk sequence/function record with a disk sequence/function determined from said serial check sum reading step", as recited by Independent Claim 9. Moreover, the array configuration of the subject Patent Application, by virtue of the beneficial features thereof, allows integrity checking of its own data. The serial check sum for every drive is "arranged in said array configuration structure in accordance with a position and function of said disk drive in said corresponding disk-array" and this arrangement may be compared with other data held in the array configuration structure, for example, by "comparing said number of disk drives computed in said indication acquiring step with a number of disk drives

determined from said serial check sum reading step" or "comparing said disk sequence/function record with a disk sequence/function determined from said serial check sum reading step" to ensure that the array configuration data has not been somehow corrupted.

These and other features are nowhere disclosed by the cited Humlicek reference. Admittedly, the reference does disclose a data structure having some features in common with the claimed array configuration structure. However, the Humlicek structure relies on the storage of hardware-dependent addresses of a disk drive that is a member of one or more groups to determine a disk drive location therein. The invention of the subject Patent Application avoids such dependency by sequencing the serial check sum of every disk in a particular disk-array "in accordance with a position and function of said disk drive in said corresponding disk-array". Moreover, even if the device IDs of Humlicek were to be ordered "in accordance with a position and function of said disk drive in said corresponding disk-array", as recited by the pending Claims of the subject Patent Application, nowhere is it disclosed in the reference either the step of "comparing said number of disk drives computed in said indication acquiring step with a number of disk drives determined from said serial check sum reading step" or the step of "comparing said disk sequence/function record with a disk sequence/function determined from said serial check sum reading step".

Given such contrary teachings of the primarily cited Humlicek reference, the disclosures of the secondarily cited Talagala and Patel references are found to be quite ineffectual to the present patentability analysis. The Examiner cited Talagala to disclose checksum algorithms to include XOR computation to additive checksum to CRC and Patel was cited by the Examiner to show the use of a checksum numerated from version and firmware revision of the disk drive. These references are not sufficient to remedy the deficiencies of Humlicek's teachings, in that neither makes reference of the ordering of features of the inventive array configuration structure nor the use of such ordering to validate the data thereof. Note that while Talagala discloses checksum algorithms, none of the disclosed algorithms are based upon "said serial check sum of each said disk drive being arranged in said array configuration structure in accordance with a position and function of said disk drive in said corresponding disk-array", which is then exploited by "reading every said serial check sum in said array configuration structure", such as is now recited by Applicant's pending Claims.

All of the pending Claims of the subject Patent Application, as now amended, either by direct recitation or by inherency from its dependency on a base Claim, include the limitations of an array configuration structure having "a serial check sum of each disk drive in said corresponding disk-array, said serial check sum of each said disk drive being arranged in said array configuration structure in accordance with a position and function of said disk drive in said corresponding

“disk-array” and “reading every said serial check sum in said array configuration structure”. Additionally, Claims based on Independent Claim 1 recite further the limitation of “comparing said number of disk drives computed in said indication acquiring step with a number of disk drives determined from said serial check sum reading step” and Claims based on Independent Claim 9 recite the further limitation of “comparing said disk sequence/function record with a disk sequence/function determined from said serial check sum reading step”. None of the prior art references cited by the Examiner disclose or suggest these limitations, even when the references are taken in combination. Thus, it is believed that the invention of the subject Patent Application is neither anticipated nor made obvious by the references cited.

The remaining references cited by the Examiner, but not used in the rejection of Claims, have been reviewed, but are believed to be further remote from the matter of the subject Patent Application than the references used in the rejections, when patentability considerations are taken into account.

It is now believed that the subject Patent Application is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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